

State of organic agriculture: global perspective

BY PROF. G.C. SAMARAWERA
AND P.N.M.M. WIJERATHNA,
FACULTY OF AGRICULTURE,
UNIVERSITY OF RUHUNA

Organic agriculture refers to farming methods that combines traditional farming methods with modern farming technologies. It has always utilised rotating crops, managing pests naturally, diversifying crops and livestock, and improving the soil with compost additions and animal and green manures.

When considering the evolution of organic agriculture in the world, in 1924 Rudolf Steiner's course on biodynamic agriculture sparked the evolution of organic agriculture in Europe. Organic agriculture was established in its own right in the 1930s and 1940s, being developed in Britain by Lady Eve Balfour and Sir Albert Howard, in Switzerland by Hans Mueller, in the United States by J.I. Rodale, and in Japan by Masanobu Fukuoka and the 4th King of Bhutan in 1970.

Present day situation

When considering the present state of organic agriculture in the world, 179 countries now have organic farming. In North America, 3.2 million hectares of farmland are managed organically and of these, 2 million in the United States and 1.2 million in Canada, representing 0.8 percent of the total agricultural area in the region. Australia (35.7 million hectares), Argentina (3.6 million hectares), and China (3.1 million hectares) are considered the largest organic agricultural areas.

In Europe, 2.9 percent of the agricultural area is organic (European Union: 7.2 percent). The countries with the largest organic agricultural areas are Spain (2.1 million hectares), Italy (1.9 million hectares), and France (1.7 million hectares). Organic farms now make up 15.3 percent of total farms in Switzerland, up from 6.9 percent 20 years ago. By 2020, the number had risen 54 percent.

Discussing the Asian context, in 2017, the total area of organic agriculture in Asia was close to 6.1 million producers, most from India. The leading countries by area are China (3 million hectares) and India (almost 1.8 million hectares). In Thailand, the Government initiated a large-scale project to convert more than 100,000 hectares of land into organic rice production within three years based on the support plan.

The global organic market continues to grow worldwide and has crossed the US \$ 100 billion mark. The United States with 40.6 billion euros is the main organic market in the world, followed by Germany (10.9 billion euros) and France (9.1 billion euros). The US organic sector continues its upward trajectory, gaining new market share and shattering records, as consumers used more organic products than ever before.

In Asia, the most important consumer markets were Japan and South Korea. Japan is one of the largest markets for organic products, after Europe and the US, owing to its large popula-



tion, high level of income, and health orientation due to its aging population.

Laws on organic farming

Considering the organic standards in the world, Japan has already enacted laws on organic farming and the labeling of its products. At the national level, Bangladesh, Vietnam, and other countries have passed national organic standards, while Cambodia has released an organic agriculture promotion roadmap. National organic standards were reviewed in China, the Philippines, and South Korea. However, not all countries have organic agriculture regulations in place, and for those that do, regulations vary from country to country.

In the US, EU, Canada, and Japan, organic standards are formulated and overseen by the Government, which means legislation is in place to ensure that only certified producers use the term "organic". When countries have no organic laws or Government guideline, certification is handled by non-profit organisations and private companies.

South Korea has implemented a framework to support policies such as 4,444 direct payment plans. The Philippines gave priority to the participatory guarantee system (GSP) in the RA10068 amendment and the Organic Agriculture Act No. of 2010", and GSP is still very strong in Indonesia.

Environmentally friendly

Organic foods have significantly less to no synthetic pesticide residues

compared with conventionally produced foods. Some shreds of evidence suggest that organic food are more nutritious (for instance, having higher concentrations of vitamin C, total antioxidants and total omega-3 fatty acids, and higher omega-3 to -6 ratios). Taking into account the environmental consideration, organic farming systems are more environmentally friendly than conventional farming systems.

For example, studies have found that organic farming systems consistently have greater soil carbon levels, better soil quality, and less soil erosion compared with conventional systems.

In addition, organic farms generally have more plant diversity, greater faunal diversity (insects, soil fauna and microbes, birds), and often more habitat and landscape diversity.



In a study covering eight Western and Eastern European countries, insecticides and fungicides had consistently negative effects on biodiversity, with insecticides also reducing the biological control potential in farming systems.

Difficulties to overcome

Recently, Bhutan has garnered great international attention as it tries to become the world's first 100 percent organic country by 2020. However, only about 10 percent could be reached. Bhutan is now working to achieve 100 percent organic farming by 2035. Numerous studies have compared yield differences between organic and conventional systems and according to these studies, yield averages are 8 to 25 percent lower in organic systems.

In Bhutan, all conventional land (13,943 hectares) accounted for 18.6 percent of the total cultivable land, but accounted for an unequal share of the total land benefits (24.3 percent). Moreover, total crop production is declining

quantitatively by -14.7 percent, and as a result, crop prices are rising sharply.

Sri Lanka is also aiming to achieve 100 percent organic farming by banning the importation of inorganic fertilisers in 2021. With the aim of converting Sri Lankan agriculture into a 100 percent organic one, the Government took a policy decision to ban the import of agrochemical with immediate effect. This decision came as a surprise to many in agriculture and other related fields. Many discussions began to surface pointing out the pros and cons of going organic as a country.

Whether, organic agriculture can continue to expand globally will primarily be determined by its financial performance compared with conventional agriculture.

The main factors that determine the profitability of organic agriculture include crop yields, labour and total costs, price premiums for organic products, the potential for reduced income during the organic transition pe-

riod (usually three years) and potential cost saving from the reduced reliance on non-renewable resources and purchased inputs.

On this ground, Sri Lanka to achieve its own goal and targets related to organic agriculture, a successful plan should be implemented with reviewing and following transitional minimum price support for organic produce to cover the current premium shortfall for organic produce to assist organic farmers.

Initiatives for collection and dissemination of data on the organic sector including unallocated reporting on organic farming and progress of national agriculture, uplifting the capacity of National Extension System to respond to organic farming needs must be made. Nurturing and protecting local knowledge of crops and farming methods, using the banking and financial services sector to become a medium and long-term strategy to promote and support organic farming may be helpful in this case.

Path to organic

When taking into account the strengths, weaknesses, opportunities and threats (SWOT analysis) of 100 percent organic farming adoption in Sri Lanka, one of the key strengths is substantial demand among consumers for organic foods. Availability of land and knowledge of preparation of natural pesticide and fertilisers, strong political support, similarity to traditional farming, compatibility with good local farming knowledge can also be identified as strengths.

However, high production cost, lack of awareness of benefits of organic agriculture, lack of credit, limitation in finding raw material, lack of coordination between different agencies, limited technical expertise can be identified as weaknesses.

There have opportunities for organic agriculture such as having a growing market for organic products and availability of effective extension services, promoting a healthy lifestyle, sustainable use of natural resources, developing local organic manure suppliers, strengthening rural community, employment opportunities. One the other hand, the threats include climate change and poor infrastructure facilities, yield reduction, and global competition.

Organic farming is more focused on a long-term sustainability, and how our actions today impact the future of the earth. Using natural forms of fertiliser and following the guidelines of organics allow us to boost our crops, but at the same time, helps restore the lost nutrients in the soil.

While we cannot say that organic farming practices are definitely the future of agriculture, we must help prolong the life of our home planet. However, at a time when farmers and cultivations in Sri Lanka are becoming more and more inclined to use chemical fertilisers, a strategic approach can be followed to gradually accustom farmers and cultivators to use fewer chemical fertiliser and more organic fertiliser.

